

This listing of claims will replace all prior versions, and listings, of claims in the application. .

Listing of Claims:

Claims 1-4 (previously cancelled)

5. (three times amended) A process for detecting toxins, said process comprising

(a) bringing together, under in vitro conditions,

(1) an anti-LTNF made

against a synthetic peptide consisting of at least five amino acids of

SEQ ID NO: 1

with

(2) at least one unneutralized biological toxin derived from animal, plant or bacteria, to cause an immunological reaction directly between the anti-LTNF and the at least one unneutralized biological toxin and produce ~~which produces~~ a product capable of being detected by ELISA, and

(b) detecting the product of such reaction by ELISA.

Claim 6 (previously cancelled)

7. (thrice amended) A process as in claim 5 wherein the anti-LTNF and the toxin are brought together in a procedure wherein the anti-LTNF is in a fluid state and the toxin comprises a lethal toxin which is attached to a plate, to produce the product capable of being detected by ELISA, said process further comprising

conducting an ELISA color assay on the product of the immunological reaction, and

obtaining a numerical result which is roughly proportional to the lethal dose of the toxin as determined by animal bioassay.

8. (Amended) A process as in claim 5 wherein the biological toxin is contained in a fluid selected from the group consisting of food, blood sera and other body fluid, saliva, urine and milk, and the ELISA is carried out by antigen capture format.

9. (five times amended) A method for numerically assessing the neutralizing potency of a specific anti-serum against a toxin for which it is specific, said method comprising

determining a neutralizing index for the anti-serum against the toxin, said neutralizing index being given by the difference between

(1) a numerical assay value for a predetermined amount of a toxin in a normal serum in a first test, and

(2) a numerical assay value for a mixture of the predetermined amount of the toxin plus a predetermined amount of the specific anti-serum in a second test,

wherein the toxin assay is determined by ELISA test of the toxin plus normal serum in the first test;

and the toxin plus anti-serum assay is determined by ELISA test of the mixture of the toxin plus the anti-serum, such mixture containing a reduced amount of free toxin due to neutralization by the anti-serum, in the second test;

wherein an anti-LTNF comprising an antibody made

(1) against natural LTNF, or

(2) against a synthetic peptide consisting of at least five amino acids of

SEQ ID NO: 1

is used as a reagent for the ELISA tests and reacts directly with free toxin in both the first test and the second test, and does not react with neutralized toxin in the second test.

wherein the numerical assay values in both the first test and the second test are given by ELISA color assay for anti-LTNF, and

wherein an anti-serum having a higher neutralizing index is indicative of a greater potency for that anti-serum against a given toxin.

10. (Thrice Amended) A method as in claim 9 wherein the anti-serums are anti-venoms.

11. (Twice Amended) A composition of matter having the capability of reacting immunologically directly with a biological toxin, said composition consisting essentially of an IgG antibody made against a peptide consisting of five to ten amino acids ~~from the N-terminal~~ of SEQ ID NO: 1 in the absence of carrier protein molecule.

12. (original) A composition of matter as in claim 11, which is in the form of an immunoglobulin selected from the group consisting of an immunized animal serum, a hybridoma cell culture and a mouse ascitic fluid.

13. (Amended) A composition of matter as in claim 12, which reacts immunologically with a toxin selected from the group consisting of an animal toxin, a plant toxin and bacterial toxin.

14. (Twice Amended) A process comprising contacting, in vitro, a an unneutralized biological toxin with an antibody made against a sequence of at least five amino acids ~~from the N-terminal~~ of SEQ ID NO: 1 under conditions to cause the unneutralized biological toxin to react

immunologically directly with said antibody.

15. (Amended) A process as in claim 14, wherein the antibody is made against LTNF having a non-immunological binding with toxins such that its antibody has the property of being able to react immunologically in vitro with a wide range of biological toxins.

16. (Amended) A process as in claim 15 which is carried out according to an ELISA double-sandwich method protocol.

17. (previously cancelled)

18. A process as in claim 14 wherein the antibody is made against a peptide consisting essentially of at least a 5 amino acid portion of SEQ ID NO: 1.

19. A process for detecting toxins, said process comprising

(a) bringing together, under in vitro conditions,

(1) an anti-LTNF made against natural LTNF protein isolated from opossum serum and having a molecular weight of 68 kDa and beginning with SEQ ID NO: 1,
with

(2) at least one unneutralized biological toxin derived from animal, plant or bacteria, to cause an immunological reaction between the anti-LTNF and the at least one unneutralized biological toxin and produce ~~which produces~~ a product capable of being detected by ELISA, and

(b) detecting the product of such reaction by ELISA.